Facilitating faculty communications using an electronic bulletin board to store and organize listserv messages*†

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The Center for Academic Informatics of the Medical College of Pennsylvania and Hahnemann University uses BULLETIN, a public-domain bulletin board system for VMS, to facilitate communication between our faculty and staff and their colleagues at other institutions. In conjunction with the VAX electronic mail program, BULLETIN can store and organize messages from Internet listserv mailing lists. The software allows us to set up individual folders within BULLETIN for each list of interest to our users. This means that they do not have to sift through "lists of lists" in order to find the ones that coincide with their interests. Another significant advantage is that users' electronic mailboxes do not become cluttered with postings from a variety of lists, interfering with their ability to read and respond to their "real" electronic mail. Yet they can still post to lists, and the posting will be sent from their user name and electronic address. BULLETIN also offers a natural structure for setting up interest groups where local users can post announcements, questions, and answers.

INTRODUCTION

As part of its automation effort, the Medical College of Pennsylvania and Hahnemann University (MCPHU) Center for Academic Informatics is building an integrated resource of online information and communication services for researchers called the Research Information Service (RIS) [1]. The overall goal of this three-year project, which is funded in part by an Information Systems Grant from the National Library of Medicine, is to increase research and research productivity. The specific RIS objectives fall into the following categories: local databases, sequence programs and databases, funding information, document delivery, and communication services. A key objective in the communication services area was to develop an online conferencing and bulletin board system.

BULLETIN, a public-domain bulletin board system, was selected because it could facilitate the use of Internet listservs as well as manage local group discussions. Recognizing that they cannot afford to work alone, today's biomedical researchers are utilizing Internet electronic mail, listservs, and Usenet news groups as an increasingly important means of communication. Reports (such as those by Chang and Woodward and Zolet) on typical medical bulletin boards have appeared in the medical literature [2–3].

CHARACTERISTICS OF LISTSERVS

Listserv lists, also called "mail reflectors," are online discussion groups [4]. Typical listserver software distributes messages that are posted to a central listserv address to subscribers of various lists. Listservs are organized around specific topics so that a primary purpose in the academic arena is to allow faculty to communicate with colleagues with similar interests.

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Scientists use the lists to keep abreast of new issues, ideas, and discoveries in a particular area; to obtain answers from experts; and to provide answers to others. There are literally hundreds of Internet lists that could be of potential interest to one or more persons working in an academic health sciences center. Lee Hancock's health sciences resources guide contains descriptions of nearly 1,000 lists [5].

In spite of their obvious usefulness, a typical user will encounter obstacles to taking full advantage of listservs. It is not easy to locate all lists that might be of interest and decide which ones to receive. A user must understand the syntax and commands for the various listserv systems. Once one subscribes to a list, the faculty member often must cope with a continual flood of messages cluttering his or her mail box and interfering with reading "real" electronic mail. Organizing messages from a variety of lists and making time to read and respond to the sometimes-lengthy list messages become difficult.

THE BULLETIN SYSTEM

The BULLETIN system was created for the VMS operating system by Mark London of the Massachusetts Institute of Technology‡. BULLETIN implementations are divided by sections covering very broad areas and folders within sections. Each list is captured in its own folder. Individual messages are stored in the folder for a period of time specified by the system manager. The messages may be read by any user with an account on the local system. Figure 1 shows the sections used in the MCPHU implementation.

BULLETIN works equally well for local discussion groups, and the last section is used for institutional groups. These may be restricted, if desired for security and confidentiality reasons, to members of a specified group.

Figure 2 shows a few of the listserv folders in the "Research" section. Display of folder descriptions is optional. Other features of BULLETIN are

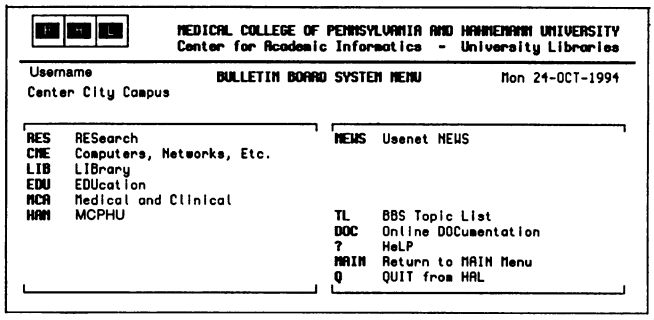
- tracking which messages have been read by individual users,
- marking folders with messages not read by individual users,
- notifying an individual user when messages are received in prespecified folders (optional), and
- listing a subset of prespecified folders with new mail each time an individual user enters BULLETIN (optional).

Implementing BULLETIN

One staff librarian is primarily responsible for selecting new lists for subscription. Tools for selection include Lee Hancock's Health Sciences Resources guide, other lists, and suggestions from users. All recommendations are sent to the BULLETIN system manager.

‡ BULLETIN is available on Internet via anonymous FTP from MVB.SAIC.COM in the VMS92B/BULLETIN directory.

Figure 1
MCPHU bulletin board sections



Creating a folder and subscribing to a listserv are straightforward. The sequence for establishing a folder for a list on the topic of chronic fatigue syndrome is as follows.

BULLETIN⟩CREATE CFS-MED /OWNER=SYSTEM
[Enter one-line description of folder.]
Chronic Fatigue Syndrome ⟨mx%"CFS-MED@LIST.NIH.GOV"⟩
[Folder is now set to CFS-MED.]
BULLETIN⟩SET DEF 90
[Default expiration is set to 90 days.]
BULLETIN⟩SET BBOARD CFS-MED
WARNING: CFS-ACCOUNT not in SYSUAF file.
Is name a forwarding entry?
Y
[Folder established in BULLETIN section.]

The procedure for subscribing to a listserv for BULLETIN is

MAIL⟩SET FORWARD /USER=CFS-MED MX%"""CFS-MED@BULLETIN"""
$ MLFAKE /FROM=CFS-MED CFS-MED LISTNIH.GOV / LISTSERV
$_Subscribe MCPHU
About to send message:
SUBSCRIBE CFS-MED MCPHU
Sending to: LISTSERV@LIST.NIH.GOV
From: ⟨CFS-MED@HAL.HAHNEMANN.EDU⟩

Institutional bulletin boards

BULLETIN is also useful for managing intra-institutional communication. Folders have been set up for interdisciplinary groups of researchers (neuroscience, molecular biology), user groups (Internet, Genetics Computer Group [GCG] programs), medical

Figure 2
Folders in the research section of BULLETIN

Folder	Last message	Messages Owner
AGEING Discussions about aging research	23-OCT-1994 17:43	62 SYSTEM
ARABIDOPSIS Newsgroup about the Arabidopsis Genome Project	21-OCT-1994 18:04	268 SYSTEM
BIO-INFO Applications of information theory to biology	23-OCT-1994 16:07	210 SYSTEM
BIO-JOBS Job opportunities	23-OCT-1994 17:21	951 SYSTEM
BIO-JOURNALS Tables of contents of biological journals	22-OCT-1994 00:16	135 SYSTEM
CELL-BIOLOGY Research in cell biology	23-OCT-1994 18:30	58 SYSTEM
CHROMOSOME-22 Mapping and sequencing of human chromosome 22	20-OCT-1994 00:52	49 SYSTEM
CONFOCAL Discussion on using confocal microscopes	23-OCT-1994 14:31	281 SYSTEM

school classes (first-year biochemistry, second-year students), and committees (Research Faculty Liaison Committee). Figure 3 shows a part of the MCPHU section of BULLETIN.

SUMMARY

BULLETIN has advantages for both system users and system managers. The program relieves users of the chore of locating and subscribing to lists. It serves an awareness function by making lists available to users who would not otherwise know they existed. And it takes over the process of managing the sometimes immense volume of messages that would otherwise build up in personal mail directories.

BULLETIN assists with system management by conserving resources. A listserv read into BULLETIN uses one twentieth the disk space and line bandwidth as twenty individual subscriptions to the same list. When multiplied by hundreds of users and hundreds of lists, the overall resource saving can be substantial. There are, however, some off-setting disadvantages. Subscribing to and managing the lists consumes staff time. Lists are created and discontinued with disconcerting frequency, necessitating a continual scan for potential new lists and verification and deletion of those that have become defunct. Some lists will accept subscriptions only from persons with accounts and so cannot be read into BULLETIN. Others become "unsubscribed" if requests for subscription confirmation are not answered. Finally, the program is not well documented.

BULLETIN has been popular with the MCPHU faculty. Both faculty and staff suggest new lists for BULLETIN. At present MCPHU is subscribing to 169 lists. They are read approximately 7,500 times a month.

Figure 3
Folders in the MCPHU section of BULLETIN

Folder	Last message	Messages Owner
BIOCHEM-QUESTIONS__AND__ANS Questions and answers for biochemistry students	12-OCT-1994 19:14	24 SYSTEM
GCG Discussion for Hahnemann's GCG users group	19-OCT-1994 09:29	28 SYSTEM
IEC__INSTITUTIONAL__ETHICS__ Comments and questions regarding medical ethics	8-OCT-1993 14:03	6 SYSTEM
IUG__INTERNET__USERS__GROUP Tips, Q&A, and discussion about the Internet	18-OCT-1994 08:42	13 SYSTEM
MED97__CLASS__OF__97 Announcements and discussions of interest to med students class of '97	24-OCT-1994 19:05	18 SYSTEM
MINORITY__AFFAIRS Includes upcoming events, recent literature searches, and funding opportunities	23-OCT-1994 17:03	20 GARDINERG
NEUROSCIENCES Discussion group for Hahnemann's Neuroscience Institute	22-OCT-1994 16:36	30 SYSTEM
RHC-RESEARCH__HAZARD__COMM Discussion re: safe handling of physical, chemical, and biological hazards	17-OCT-1994 09:48	11 SYSTEM

The intra-institutional (MCPHU) section of BULLETIN receives slightly more use.

BULLETIN is MCPHU's solution to one aspect of the overall "organization of Internet information" problem. It is part of a larger system that provides menu-driven access to other Internet resources such as those on Gophers or World Wide Web servers and Usenet news and to databases created locally, licensed databases, and the library catalog.

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